Construction and Test Results on 40 mm Bore 5 m Long Quadrupole Magnets for the SSC. * C.E. TAYLOR, C. PETERS, A. WANDESFORDE, S. CASPI, D. DELL'ORCO, W. GILBERT, A. LIETZKE, K. MIRK, R. SCANLAN, AND J. CORTELLA. Lawrence Berkeley Laboratory, Berkeley, CA 94720 --- At LBL we have designed and built six 40 mm bore, 5m long quadrupole magnet models for the SSC collider. The magnet has two layers of 30 strand cable in a cos 2 θ current distribution, supported by collars and centered in a two piece cold iron yoke; construction will be described. Test results will be presented on training, sensitivity to current ramping rate, field quality, and mechanical performance. The SSC operating gradient is 212 T/m at 6500 A. The magnets generally train between 7000 and 8000 A and have a "short sample" current of about 8000 A. They appear to meet the SSC requirements and a similar production version is now being developed by the SSC Laboratory.

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